

Air Pollution Control Technology ETV Technology Status

HAZARDOUS AIR POLLUTANTS

Paint Overspray Arrestors

Company	Technology	Pollutants	Dates	Status
Air Technologies, Inc. 205 West 17 th St. Ottawa, KS 66067 Keith Gutreuter 800/624-8739 Fax: 785/242-8700	Filter for paint arrestor overspray collection	Fine Particles (Paint Overspray Arrestor)	12/16/97; Letter submitted by K. Gutreuter to J. Farmer.	Commercial item. Required as MACT under Aerospace NESHAP.
InnovaTech, Inc. 4608-D Industry Lane Durham, NC 27713-5414 Jeffrey Bond 919/544-1717 Fax: 919/361-3535	Boundary Layer Momentum Transfer A Paint Arrestor®	Fine particles	11/05/97; Letter submitted by J. Bond to J. Farmer.	Development item, expect to commercialize soon. Data available from SBIR test as engine air intake filter.

Mercury Control

Company	Technology	Pollutants	Dates	Status
Modulart Equipment, Inc. 286 St. Paul St. W., Suite 100 Montreal, Quebec Canada, H2Y 2A3 Oscar Gaube 514/842-4150 Fax: 514/842-9661	Mercury injector for neon tube manufacture Uses microprocessor for Hg injection with digital scale	Mercury	02/24/98; Letter submitted by O. Gaube to J. Farmer.	Reduces Hg emission during neon tube manufacture by delaying injection until end of manufacturing cycle when the tubes are cool and by improved Hg handling techniques. Five systems being installed in U.S. No performance data yet.

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FINE PARTICULATE MATTER

Baghouse Filtration Products

Company	Technology	Pollutants	Dates	Status
W. L. Gore & Associates, Inc. 101 Lewisville Rd. P.O. Box 1100 Elkton, MD 21922-1100 John Darrow 410/996-3316 Fax: 410/398-6624	GORE-TEX7 membrane filter bags	Fine particles	01/29/98; Letter submitted by J. Darrow to J. Farmer.	Expanded polytetrafluoroethylene membrane film laminated to support fabric.
BWF America, Inc. 7453 Empire Drive #340 Florence, KY 41042 Clinton Scoble 606/282-4550 Fax: 606/282-4555	MPS needled felt bag filter fabric	Fine particles	04/17/98; Letter submitted by ETS to J. Farmer.	Micro pore size (MPS) needled felts containing micro-fibers and other special manufacturing techniques designed to provide efficient pulse jet media. Bags in use at several industries. Emissions are typically 1 mg/m ³ .
Specific Surface Corporation 101 Constitution Blvd., Unit D Franklin, MA 02038 Andrew Jeffery 508/520-9586 Fax: 508/520-9552	CleanstacJ filter elements	Fine particles	04/27/98; Submitted to RTI through ETS.	Rigid ceramic filter elements with modular construction. Units have variable surface area, highly uniform porosity with tailored micro-structure. One pilot plant operating. Lab results show 99.99%.
TETRATEC 1741 Loretta Avenue Feasterville, PA 19053 James Griffin 215/355-7111 x130 Fax: 215/355-6745	Membrane filter	Fine particles	05/29/98; Submitted by J. Griffin to J. Farmer.	Expanded PTFE membrane laminated to support fabric; surface filtration with microporous structure for fine particle collection.

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FINE PARTICULATE MATTER

Wet ESP

Company	Technology	Pollutants	Dates	Status
Croll-Reynolds Company, Inc. 751 Central Ave. P.O. Box 668 Westfield, NJ 07091-0668 James Reynolds 908/232-4200 Fax: 908/232-2146	<i>CONDENSING WESPJ</i> Jacketed, water-cooled, vertical tube, upflow wet ESP utilizing condensation for collection	Fine particles	04/20/97; Letter submitted by B. Martin to EPA 03/30/98; Updated information submitted to J. Farmer.	Commercialized with efficiency cited. Guarantees 0% opacity and 99% removal efficiency for PM _{2.5} . Ten units in operation.
FLS miljø Inc. 3 Century Drive Parsippany, NJ 07054-4610 Joseph Bruno 973/490-6414 Fax: 973/538-8066	AirPol Wet ESP, downflow tubular design	Fine particles	04/20/98; Letter submitted by J. Bruno to J. Farmer.	High field strength claimed, along with low water use, thereby good efficiency on fine particles. Several units installed at wood products, sewage sludge incineration, and pulp and paper plants.

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FINE PARTICULATE MATTER

Dust Suppression

Company	Technology	Pollutants	Dates	Status
Block Environmental Services 2451 Estand Way Pleasant Hill, CA 94523 Ronald Block 510/682-7200 Fax: 510/686-0399	<i>Pennz Suppress D</i> Dust suppressant for unpaved roads and soil stabilization	Particles	12/15/97; Letter submitted by R. M. Block to J. Farmer.	Technology submitted to the California ETV program.
Midwest Industrial Supply, Inc. PO Box 8431 Canton, OH 44711 Robert Vitale 330/456-3121 Fax: 330/456-3247	Envirokleen®	Fine particles	06/08/98; Submitted by R. Vitale to J. Farmer.	Chemical suppressant for controlling particles, including fine particles, from open fugitive dust sources including unpaved roadways and areas.

Scrubber

Company	Technology	Pollutants	Dates	Status
Atmospheric Physics, Inc. P.O. Box 216 Peralta, NM 87042 Clyde Richards 505/869-3019 Fax: 505/869-3970	<i>Cloud Chamber Scrubber</i> Uses corona discharge and water droplets in scrubber	Various acid gases Fine particles	05/05/98; Letter submitted by C. Richards to J. Farmer.	No commercial units. 10,000 cfm pilot unit used to test system efficiency. Results indicate 90% removal of ammonium chloride and oil smoke particles.

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NITROGEN OXIDES

Add-on NO_x Controls

Company	Technology	Pollutants	Dates	Status
LEKA PO Box 478 Middletown, NJ 07748 Les Cadigan 732/615-3950 Fax: 732/615-0695	Formerly <i>Envirofog</i> , Ascrubber® with heat recovery for end of pipe application	NO _x SO _x VOC Particles	1997; Submitted to EPA. 04/28/98; Updated submission. 05/21/98; Updated submission	Drawings show commercial unit equipment; no photos of equipment. No data in package. Was verified by Canadian ETV.
CRI Catalyst Company Two Greenspoint Plaza Suite 1110 16825 Northchase Dr. Houston, TX 77060 C. Philipp Brundrett 281/876-8068 Fax: 281/874-2499	Shell <i>DeNO_x</i> , a NH ₃ injection SCR technology	NO _x	04/30/98; Letter submitted by C. P. Brundrett to J. Farmer.	Novel/innovative features include low temperature operation, compact, low pressure drop, >90% NO _x removal, and easy retrofit. Twenty-two units in operation on gas turbines, heaters/ furnaces, and nitric acid plants.
Sorbent Technologies Corp. 1664 East Highland Road Twinsburg, OH 44087 Sidney Nelson 330/425-2354 Fax: 330/425-3983	Jetsorbent Filter	NO _x small particles	09/11/98; faxed from S. Nelson to J. Farmer	Commercial installations at McClellan AFB, NASA LRC

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VOLATILE ORGANIC COMPOUNDS

Adsorption

Company	Technology	Pollutants	Dates	Status
M & W Industries, Inc. PO Box 952, Old Hwy. 52N Rural Hall, NC 27045 Michael J. Caruso, Jr. 336/969-9526 Fax: 336/969-2156	Re-Gensorb™	VOCs HAPs	07/30/98; Submitted by M. Caruso to J. Farmer.	Combines fixed-bed zeolite-based adsorption with oxidation; cost effective technology for applications with large airflow and low VOC/HAP concentrations. Approximately 25 units in commercial operation.
Berty Reaction Engineers, Ltd. 1806 Bent Pine Hill Fogelsville, PA 18051-1501 Joe Berty 610/391-1676 Fax: 610/391-9434	OXITOX®	VOCs	07/17/98; Submitted by J. Berty to J. Farmer.	Activated sodium carbonate in pelletized form reacts with oxygen in the air to destroy VOCs. Small pilot plant studied; no commercial systems yet.

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VOLATILE ORGANIC COMPOUNDS

Biosystems

Company	Technology	Pollutants	Dates	Status
ISOTEK, L.L.C. 9400-E Southern Pine Blvd. Charlotte, NC 28273 Timothy Owens 704/529-5551 Fax: 704/529-5298	Bioscrubber	VOCs Ammonia	01/12/98; Letter submitted by T. Owens to J. Farmer.	Combination of tray tower wet scrubber with a bioreactor tank. Slurry recirculates through the tower. Increased mixing allows higher ratio of contaminant to organism and consequent smaller size systems.
VEETech, P.C. 1240 SE Maynard Road Suite 203 Cary, NC 27511 Amitava Sarkar 919/388-0037 Fax: 919/388-0038	Biosorption	VOC	06/15/98; Letter submitted by A. Sarkar to J. Farmer	Full scale system in operation in Marietta, GA, over 8 months.

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VOLATILE ORGANIC COMPOUNDS

Combustion

Company	Technology	Pollutants	Dates	Status
Texas*Ohio Energy 9821 Katy Freeway, Suite 425 Houston, TX 77024 James Cavazos 888/886-2436 Fax: 713/461-7832	<i>VOCgen</i> , gas turbine co-fired with VOC- containing air	VOC	11/21/97; Submitted to EPA. 3/27/98; Updated submission.	Commercial item. Existing data available. Allied Signal turbine has been used for years. Use as air pollution control device apparently new. VOC destruction \$ 98%. One operating unit at a polystyrene molder.
Dept. of Biological Sciences Stanford University Stanford, CA 94305-5020 Bruce O'Hara 650/725-6510 Fax: 650/725-5356	<i>Energy Efficient Afterburner</i>	VOC Particles	09/17/97; Letter submitted by B. O'Hara to T. Brna. 01/26/98; Updated with additional information.	Prototype only. Not yet commercial. Prototype applied to automobile exhaust and wood stove. Patented 10/95.

SULFUR DIOXIDE

Company	Technology	Pollutants	Dates	Status
Alanco Envir. Resources Corp. 15900 N. 78 th Street Suite 101 Scottsdale, AZ 85260 Charles Miller 602/607-1010 Fax: 602/607-1515	Model III Charged Dry Sorbant Injection System	SO ₂	10/28/97; Letter and information submitted.	Commercially available. Tested in China on coal- fired boiler; not used in U.S. to date.

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JAERI Matsudo City NKK Corporation	E-beam irradiation for removal of NO _x , SO _x , and HCl from municipal waste incinerator	NO _x SO _x HCl	Partial submission 1998.	Information not complete. Appears to be E-beam reactor followed by adsorbers to collect SO _x , NO _x , and Chlorine.
Cannon Technologies, Inc. P. O. Box 1 New Kensington, PA 15068 Arthur Skelley 724/335-8541 Fax: 724/335-3125	<i>LTO / LoTOx</i> Flue gas cooled, ozone injection for reaction with NO _x , followed by wet scrubber	NO _x	Discussed with vendor 2/98 at ICAC meeting but no written submission.	Commercial test in progress. Attempting to contact Cannon to determine level of interest.
CSM Environmental Systems 200 Sheffield Street, Suite 305 Mountainside, NJ 07092 James McKee 908/233-2882 Fax: 908/233-1064			06/16/98; Developer expressed interest but has not yet submitted.	
Pavilion Technologies, Inc. 11100 Metric Boulevard, #700 Austin, TX 78758-4018 Paul Reinermann, III 512/438-1400 Fax: 512/438-1401	Process Insights		06/16/98; Developer expressed interest but has not yet submitted.	Process modeling and optimization software.
Envirogen, Inc. Princeton Research Center 4100 Quakerbridge Road Lawrenceville, NJ 08648 William J. Fucich 609/936-9300 Fax: 609/936-9221	Biotrickling filter	VOC	06/18/98; J. Farmer invited to Visitors' Day demo but not yet submitted.	VOC destruction via biological agents. Demo conducted at NAS North Island, CA.

These technologies have not been officially submitted to ETV but are included for completeness.